REMARKS/ARGUMENTS

Claims 36 and 39-51 are active. Support for the amendment to claims 36 and 40 is found at specification page 18, second full paragraph, and at specification page 21, line 5 (see the preceding paragraph at specification page 20 for confirmation that the content of Bi is being described here). Support for new claim 42 is found at specification page 22, first full paragraph. New claims 43, 44, 45, 46, 49 and 50 are supported by Claims 36, 39 and 41 and by the paragraph bridging specification pages 21 and 22. New claims 47, 48 and 51 are supported at specification page 22, first full paragraph. No new matter has been entered.

Prior claims 36-41 were rejected over U.S. 7,018,696 to Nee (U.S. '696). The basis of the rejection was 35 U.S.C. 102(e). This rejection is traversed as U.S. '696 does not qualify as prior art against the present application.

Attached hereto are English translations of two of Applicants' priority documents: Japan 2002-239972 filed **August 20, 2002**, and Japan 2002-361117, filed **December 12, 2002**. U.S. '696, the applied reference, was filed significantly later: the application that led to U.S. '696 was filed April 16, **2004**, claiming priority to a U.S. provisional application filed April 18, **2003**.

Applicants translated priority documents support at least pending rejected claims 36, 39-42 and 48 herein. See, e.g., paragraphs 0022, 0023, 0030, 0034 and 0035 of Japan 2002-239972:

> [0022]
> [Mode for Carrying Out the Invention]
> The present inventors have conducted a close study under the foregoing problems in order to provide an Ag base alloy reflective film or semi-transmissive reflective film for an optical information recording medium having high thermal conductivity, high reflectance, and high durability. As a result, they found that **an Ag base alloy containing Bi** and/or

Sb **in a total amount of 0.005 to 0.4 %** has high reflectance and high thermal conductivity comparable to those of pure Ag, and is capable of exhibiting a higher level of durability than that of pure Ag, leading to the completion of the present invention. Below, the present invention will be described in details.

[0023]

An Ag base alloy reflective film or semi-transmissive reflective film for an optical information recording medium of the present invention comprises an Ag base alloy containing Bi and/or Sb **in a total amount of 0.005 to 0.4 %** as an essential element. Such a reflective film or a semi-transmissive reflective film comprising the Ag base alloy not only has high thermal conductivity and high reflectance comparable to those of pure Ag, but also has excellent durabilities (thermal stability and chemical stability).

[0030]

Further, at least one selected from Cu, Au, Rh, Pd, and Pt may also be added for the purpose of improving the durability, particularly the chemical stability of the Ag base alloy containing Bi and/or Sb. These elements have effects of further suppressing the aggregation of Ag atoms due to the effects of chlorine ions, and still further enhancing the durability. In order for the aggregation suppression effect of Ag atoms to be effectively exhibited, the total amount added is set at **preferably 0.1 % or more and 3 % or less. It is more preferably 0.1 % or more and 2 % or less.**

[0034]

Incidentally, **the Ag base alloy reflective film for an optical information recording medium in the present invention is a thin film for use as a reflective film** for single-layer recording for performing recording only on one side of a disk, or the uppermost layer reflective film for multilayer recording. **The transmittance is almost 0 %, and the reflectance is defined by the constitution of the disk, and about 45 % or more. Whereas, the film thickness may be appropriately determined in such a range as to meet the foregoing reflectance and transmittance,** and it may be normally set at about 50 to 200 nm.

[0035]

Whereas, **the semi-transmissive reflective film of the present invention** is a film for use as a reflective film of a medium for performing two or more multilayer recording on one side of a disk. The transmittance / reflectance are defined according to the configuration of the disk. However, the semi-transmissive reflective film denotes a thin film having a

transmittance of about 60 to 72 % and a reflectance of about 18 to 30 %. Further, **the thickness thereof may be appropriately determined in such a range as to meet the foregoing reflection and transmittance requirements**, and it may be normally set at about 5 to 20 nm.

See also, e.g., paragraph 0041 of Japan 2002-361117:

[0041]
Therefore, the Bi content in the sputtering target in accordance with the present invention is required to be set larger than each Bi content in the objective reflective film and semi-transmissive reflective film. **For example, in order to obtain a reflective film and a semi-transmissive reflective film each containing Bi in an amount of 0.005 to 0.40 %, the Bi content in the sputtering target may be set at** 0.05 % or more and 4.5 % or less, and preferably 0.1 % or more and 3.6 % or less in consideration of the content of Bi which will not be incorporated into the film.

Accordingly, because Applicants' priority documents Japan 2002-239972 filed August 20, 2002, and Japan 2002-361117, filed December 12, 2002, fully support the invention as claimed in pending claims 36, 39-42 and 48 they thereby antedate U.S. '696 and the rejection over this reference should be withdrawn. U.S. '696 does not suggest the combination of 0.005 to 0.4 atom % of bismuth and 0.01 to 2 atom % of at least one rare earth metal element required by Claims 43-47 and 49-51.

The remaining rejections are no longer pertinent to the amended and new claims, which require 0.005 to 0.4 atom % of bismuth and, in Claims 43-47 and 49-51, 0.01 to 2 atom % of at least one rare earth metal element. Japan '725 is perhaps most pertinent (see paragraph 7 of the Official Action), but the lowest amount of bismuth suggested is 0.5% and up. As noted at specification page 21, lines 1-7, a bismuth range of 0.005 to 0.4 atom % provides both high reflectance and high thermal conductivity, while amounts above 0.4% show poor thermal conductivity. In fact, the present specification specifically points out that bismuth amounts of 0.5%, as in Japan '725, reduce thermal conductivity as compared to

0.4%. See specification page 23, lines 19-20. This trend continues at 0.6% Bi as compared to 0.4% Bi, as shown in Table 1 of the present specification (filed with the Preliminary Amendment; see Samples 4 and 5):

[Table 1]
Results of thermal conductivity measurement

Sample No.	Composition	Thermal conductivity [W/(m·K)]	High thermal conductivity
1	Pure Ag	320	○
2	Ag-0.005at% Bi Alloy	319	○
3	Ag-0.2at% Bi Alloy	296	○
4	Ag-0.4at% Bi Alloy	271	○
5	Ag-0.6at% Bi Alloy	247	×
6	Ag-0.005at% Sb Alloy	316	○
7	Ag-0.2at% Sb Alloy	292	○

and Table 3 of the present specification (also filed with the Preliminary Amendment; see Samples 4 and 5):

[Table 3]
Results of reflectance measurement

Sample No.	Composition	Reflectance relative to Pure Ag [%]		High reflectance
		Wavelength 405nm	Wavelength 650nm	
1	Pure Ag	90.8	82.5	○
2	Ag-0.005at% Bi Alloy	90.7	82.5	○
3	Ag-0.2at% Bi Alloy	86.2	80.8	○
4	Ag-0.4at% Bi Alloy	81.5	80.1	○
5	Ag-0.6at% Bi Alloy	77.0	87.4	×
6	Ag-0.005at% Sb Alloy	80.7	92.5	○

Because nothing in any cited reference, or any combination thereof, discloses or suggests the claims as now amended Applicants request the reconsideration and withdrawal of the outstanding prior art rejections.

Finally, with regard to the provisional double patenting rejections, these rejections are no longer pertinent in view of the amendments to the claims, etc. Accordingly, as this case is now in condition for allowance Applicants respectfully request the Examiner to pass this case to Issue.

Respectfully submitted,

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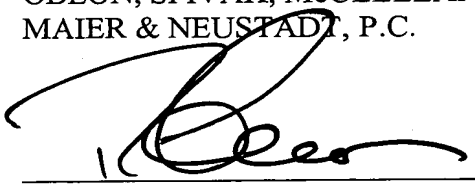

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